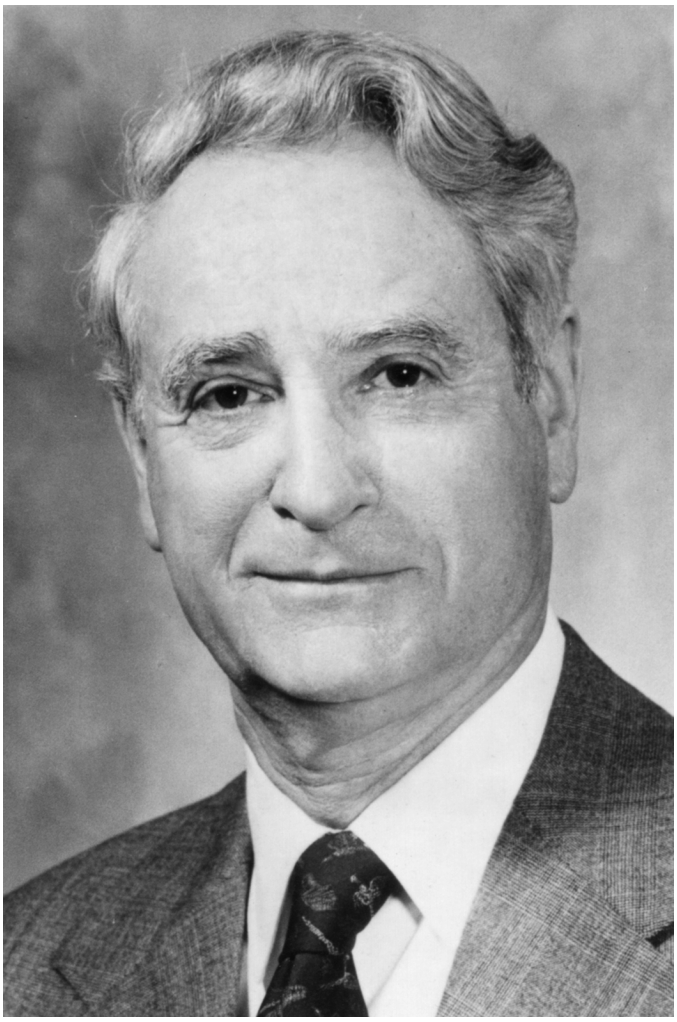
Frederick Newcomb Andrews, 1914–1998: A Brief Biography

Tilden Wayne Perry[1,2]



Dr. Frederick N. Andrews, a retired Purdue University vice-president, died in his home in West Lafayette, Indiana, on August 26, 1998. He rose through the ranks at Purdue University, starting as assistant professor of animal husbandry to full professor of animal husbandry in 1949. He was appointed to a 4-yr term as assistant to the dean of the graduate school, while maintaining his appointment in animal husbandry. Andrews was appointed head of the dairy department in 1960 and vice president and dean of the graduate school in 1960. He was also general manager of the Purdue Research Foundation from 1964 until his retirement in 1980. Following his retirement, he and his wife, Gertrude, resided at their home at 690 Sugar Hill Drive, West Lafayette, IN.

To his undergraduate students in the physiology of reproduction, he was recognized as gifted scholar and teacher. To his 16 graduate students, he was recognized as a brilliant but a strongly disciplined major professor. To his colleagues at Purdue, and around the world, he was recognized as a brilliant scholar, researcher, and author. To administrators at Purdue, he was recognized as the most logical choice as graduate dean and vice-president. To practical cattle feeders, he was known as the leader of the team that first used hormones to cause cattle to grow more rapidly and efficiently. Exogenous hormones for beef cattle are important to the industry today, more than a half-century after the first use by Andrews in 1948. His foresight helped him persuade Purdue administrators that an unused horse barn on campus should be remodeled into an animal environmental laboratory, thus establishing one of the first such laboratories on a university campus. He was codirector of this laboratory, known as the Herrick Laboratory.

Fred Andrews was born in Boston, MA, on February 5, 1914. He received his bachelor's and master's degrees from the University of Massachusetts. He then moved to the University of Missouri, where he received his doctorate degree in 1939. He was awarded an honorary doctor of agriculture by the University of Massachusetts (1962) and an honorary doctor of agriculture degree by Purdue University (1983). He was also awarded distinguished alumnus citations from the University of Missouri (1966) and from the University of Massachusetts (1976).

Andrews was a member of many organizations, including the Organization of American States Commission (later named American Institute of Agricultural Sciences), the Carnegie Corporation Advisory Board for the Study of American Colleges of Agriculture, and the Council on Federal Relations of the Association of American Universities. Also, Fred was a member of the American Society of Animal Science, the American Dairy Science Association, the New York Academy of Science, the American Association of Anatomists, the Tyler Prize executive committee, Showalter Selection committee, Sigma Xi, Gamma Sigma Delta, Phi Beta Kappa, and Phi Kappa Phi.

He served on Indiana Gov. Edgar Whitcomb's Commission on Medical Education, on Gov. Otis Bowen's Science

[1,2]The preparer of this biography was a graduate student of Dr. Andrews. The preparer wishes to express gratitude to the following for assistance in providing information for the biography: *The Lafayette* [*Indiana*] *Journal-Courier*: former graduate students of Dr. Andrews: W. E. Dinusson (Fargo, ND), Martin Stob (West Lafayette, IN), and E. J. Turman (Stillwater, OK), as well as Paul Malven (Purdue University).

Received May 18, 1999.

Accepted May 21, 1999.

Advisory Committee, and on several missions for the Rockefeller and Ford Foundations. He was a panel member of the Presidential Advisor Committee on the World Food Supply, and a consultant to several corporations and to several American universities. He was past chairman of the Council for Research Policy and Graduate Education of the National Association of State Universities and Land Grant Colleges and had been active in graduate education in the Association of Graduate Schools, the Council of Graduate Schools, the CIC Committee of Graduate Deans, and the Indiana Association of Graduate Schools. He was vice-president and director of the Indianapolis Center for Advanced Research.

Andrews was the author or coauthor of more than 150 scientific publications and coauthor of four college text books, one of which *Breeding and Improvement of Farm Animals*, has been published in six editions and has been reprinted in Spanish, Polish, and a Far East edition.

A special honor for a scientist is one that comes from his or her peer group. Andrews was so honored by receiving the Sigma Xi Award at Purdue University in 1949 and by his election as a Fellow of the American Association for the Advancement of Science. Perhaps the most crowning award in this category was the most prestigious award the American Society of Animal Science can bestow, namely, the F. B. Morrison Award, "In recognition of his outstanding contribution to scientific research in the field of animal science" in 1961.

Andrews held three patents; one for the Lean-Meter, a device which he developed with a physicist colleague to measure the amount of subcutaneous fat in hogs. He held a patent for the addition of zinc bacitracin to silage based on several papers describing its beneficial effects, but this never did catch on. He also patented the production of the fermentation estrogen, zearalenone, also known as RALGRO, still widely used as a growth stimulant for beef cattle.

In 1990, the Purdue University Fellowships were renamed the Frederick N. Andrews Doctoral Fellowships, designed to attract gifted students in all disciplines. A few of his graduate students for whom he served as major professor perhaps best typify Fred Andrews, the scholar, the educator, and the major professor. William E. Dinusson, retired professor of animal science at North Dakota State University recalls that "Dr. Andrews was a mentor and a friend. When I went to take a graduate record exam, he went with me and he also took the exam. His class in endocrinology created an interest in the new area of the use of exogenous hormones, which had been researched to improve carcass quality in poultry and to stimulate milk production in dairy heifers, but nothing had been published about its use to stimulate growth in beef heifers. My research with Andrews demonstrating the growth-stimulatory effect from diethylstilbestrol (DES) began a new phase of finished beef production. While FDA later withdrew permission to use DES in beef cattle, this innovative research was the basis for several exogenous hormones and hormone-like substances now used for beef cattle production today. Dr. Andrews also was involved in research with other hormones and hormone-like substances, including thyroprotein and thiouracil."

Martin Stob, retired animal sciences professor at Purdue University and graduate student of Andrews recalled that "although identified as a reproductive physiologist, he was best known for his research demonstrating the effects of hormones on growth and feed efficiency of cattle and sheep. This research revolutionized the cattle feeding industry. A part of his genius as a research scientist derived from his curiosity, and his ability to cooperate, not only with his department colleagues, but also with scientists in many other disciplines. Early on, he recognized the importance of cooperative efforts with industry. Perhaps his reputation as a researcher obscured his excellence as a teacher, particularly of the undergraduate and graduate courses in reproductive physiology that he pioneered at Purdue. His teaching skills were not limited to the classroom. Early in his career, he and Frank DeLacroix, a dairy extension specialist, conducted workshops that trained students in the techniques of artificial insemination. In his nonacademic life, Fred was a very private man. He loved, and was quite skilled at, woodworking, building his home and making much of the furniture therein."

Paul Malven, the first Frederick N. Andrews Distinguished Professor of Animal Science, at Purdue University, commented that "when I first joined the animal sciences staff at Purdue University, Dr. Andrews had become graduate dean. However, the lab space I was assigned had formerly been that of Dr. Andrews and I was quite aware of the impact this man had on the field of endocrinology and on Purdue University. He was a pioneer in the application of endocrine principles to the solution of problems in animal production, both in reproduction and growth. During his 15 years as graduate dean and vice-president for research, he influenced in many positive ways the operation of the graduate school and the Purdue Research Foundation. His decentralization of authority over graduate students among departmental faculty committees and individual student advisory committees was a hallmark of the Andrews style of administration. The growth and success of the Purdue Research Foundation, a fiscally independent yet closely linked organization, was due in a large measure to the foresight and capability of Dr. Andrews."

Retired Professor of Animal Science at Oklahoma State University, and former graduate student of Dr. Andrews E. J. Turman said, "I was fortunate that Dr. Andrews accepted me as a graduate student at Purdue University. There is no doubt that having been a student of Dr. Andrews was a big help to me in my career. I had tremendous respect for Dr. Andrews as a scientist and educator. He had tremendous influence on my subsequent career and I owe a great deal to him."

Surviving with his wife are one son, Frederick M. Andrews, of Seattle, WA, and one daughter, Donna E. Whitley, of Manchester, England.